un	created by the STIC System Branch CRF Processing Date: 12/11/
	nanged a file from non-ASCII to ASCII
Ch	anged the margins in cases where the sequence text was "wrapped" down to the next line.
Ed	ited a format error in the Current Application Data section, specifically:
Ed apı	ited the Current Application Data section with the actual current number. The number injuried by the plicant was the prior application data; or other
٩d	ded the mandatory heading and subheadings for "Current Application Data".
Ξdi	ited the "Number of Sequences" field. The applicant spelled out a number instead of using an integ
)h	anged the spelling of a mandatory field (the headings or subheadings), specifically:
Coi	rrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were:
nse	erted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:
	rected subheading placement. All responses must be on the same line as each subheading. If the licant placed a response below the subheading, this was moved to its appropriate place.
ipp	• · · · · · · · · · · · · · · · · · · ·
ipp Ins	licant placed a response below the subheading, this was moved to its appropriate place.
ns Dei	erted colons after headings/subheadings. Headings edited included:  leted extra, invalid, headings used by an applicant, specifically:
Ins Del	erted colons after headings/subheadings. Headings edited included:  leted extra, invalid, headings used by an applicant, specifically:  leted:  non-ASCII "garbage" at the beginning end of files?
Dei	erted colons after headings/subheadings. Headings edited included:  leted extra, invalid, headings used by an applicant, specifically:  leted: In non-ASCII "garbage" at the beginning and of files? In secretary initials/filename at ending page numbers throughout text; In other invalid text, such as
Ins Del	erted colons after headings/subheadings. Headings edited included:  leted extra, invalid, headings used by an applicant, specifically:  leted:  non-ASCII "garbage" at the beginning end of files;  page numbers throughout text;  other invalid text, such as  serted mandatory headings, specifically:
Del De Co	erted colons after headings/subheadings. Headings edited included:  leted extra, invalid, headings used by an applicant, specifically:  leted: non-ASCII "garbage" at the beginning and of files: secretary initials/filename at end page numbers throughout text; other invalid text, such as serted mandatory headings, specifically:  rected an obvious error in the response, specifically:
Del De Co	erted colons after headings/subheadings. Headings edited included:  leted extra, invalid, headings used by an applicant, specifically:  leted: non-ASCII "garbage" at the beginning and of files? secretary initials/filename at end page numbers throughout text; other invalid text, such as serted mandatory headings, specifically:  letered an obvious error in the response, specifically:  ited identifiers where upper case is used but lower case is required, or vice versa.
Del De Co Co A *	erted colons after headings/subheadings. Headings edited included:  leted extra, invalid, headings used by an applicant, specifically:  leted: non-ASCII "garbage" at the beginning and of files? secretary initials/filename at end of page numbers throughout text; other invalid text, such as serted mandatory headings, specifically:  meeted an obvious error in the response, specifically:  ited identifiers where upper case is used but lower case is required, or vice versa.  meeted an error in the Number of Sequences field, specifically:

\*Examin r: Th above corrections must be communicated to th applicant in the first Offic Action. DO NOT's nd a c py of this form.

46

## RAW SEQUENCE LISTING PATENT APPLICATION US/08/711,961

DATE: 12/11/96 TIME: 19:33:03

```
This Raw Listing contains the General Information Section and up to the first 5 pages.

Information Section and up to the first 5 pages.

Information Section and up to the first 5 pages.

Information Section and up to the first 5 pages.

Information Section and up to the first 5 pages.

Information Section and up to the first 5 pages.

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Information Section and up to the first 5 pages.

Information Section and up to the first 5 pages.

Information Section and up to the first 5 pages.

Information Section and up to the first 5 pages.

Information Section and up to the first 5 pages.

Information Section Sectio
              (1)
                                  General Information:
              (i) APPLICANT: Arthur A. Branstrom
             Donata R. Sizemore
             Jerald C. Sadoff
             (ii) TITLE OF INVENTION: Bacterial Delivery System
  8
10
             (iii) NUMBER OF SEQUENCES: 8
11
12
             (iv) CORRESPONDENCE ADDRESS:
             (A) ADDRESSEE: John Moran
13
             (B) STREET: USA MRMC - MCMR-JA
              (C) CITY: FORT DETRICK, FREDERICK
15
             (D) STATE: MARYLAND
16
17
             (E) COUNTRY: USA
             (F) ZIP: 21702-5012
18
19
20
              (V) COMPUTER READABLE FORM:
              (A) MEDIUM TYPE: Floppy disk
21
              (B) COMPUTER: Apple Macintosh
22
              (C) OPERATING SYSTEM: Macintosh 7.5
23
24
              (D) SOFTWARE: Microsoft Word
25
              (vi) CURRENT APPLICATION DATA:
26
              (A) APPLICATION NUMBER:
27
28
              (B) FILING DATE:
29
              (C) CLASSIFICATION:
30
31
              (vii) PRIOR APPLICATION DATA:
32
              (A) APPLICATION NUMBER:
33
             (B) FILING DATE:
34
35
             (viii) ATTORNEY/AGENT INFORMATION:
             (A) NAME: Moran, John
36
37
             (B) REGISTRATION NUMBER: 26,313
             (C) REFERENCE/DOCKET NUMBER:
38
39
40
             (ix) TELECOMMUNICATION INFORMATION
41
             (A) TELEPHONE: (301) 619-2065
             (B) TELEFAX: (301) 619-7714
42
43
44
             (2) INFORMATION FOR SEQ ID NO:1:
45
```

(i) SEQUENCE CHARACTERISTICS:

PAGE: 2

47

## RAW SEQUENCE LISTING PATENT APPLICATION US/08/711,961 TIME: 19:33:07

DATE: 12/11/96

INPUT SET: S14333.raw

```
(B) TYPE: Nucleic acid
48
    (C) STRANDEDNESS: Double
49
50
    (D) TOPOLOGY: Linear
51
52
53
    (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
    TCCATAATCA GGATCAATAA AACTGCTGCA GAAATGATTT
                                                         40
54
                                                         80
55
    CATTCATAAC
                TCAAATTCCC
                            TGATAATTGC
                                         CGCGGACTTT
                                                        120
    CTGCGTGCTA
                ACAAAGCAGG
                            ATAAGTCGCA
                                        TTACTCATGG
56
                ATTGATTAAT
                            TTCACTTGCG
                                        ACTTTGGCTG
                                                        160
    CTTCGCTATC
57
    CTTTTTGTAT
                GGTGAAAGAT
                            GTGCCAAGAG
                                        GAGACCGGCA
                                                        200
58
                                                        240
59
    CATTTATACA
                GCACACATCT
                            TTGCAGGAAA
                                        AAAACGCTTA
                            GGCTGGCGCG GTATGGTCGG
                TGGTTTTATC
                                                        280
60
    TGAAAAATGT
                                                        320
    CTCCGTTCTC ATGCAACGCA TGGTTGAAGA GCGCGACTTC
61
    GACGCCATTC GCCCTGTCTT
                            CTTTTCTACT TCTCAGCTTG
                                                        360
62
                                                        400
63
    GCCAGGCTGC GCCGTCTTTT
                            GGCGGAACCA CTGGCACACT
    TCAGGATGCC
                TTTGATCTGG
                            AGGCGCTAAA GGCCCTCGAT
                                                        440
64
    ATCATTGTGA CCTGTCAGGG
                            CGGCGATTAT ACCAACGAAA
                                                        480
65
66
    TCTATCCAAA
                GCTTCGTGAA
                            AGCGGATGGC AAGGTTACTG
                                                        520
                                                       $560
67
    GATTGACGCA GCATCGTCTC
                            TGCGCATGAA AGATGACGCC
                                                       600
    ATCATCATTC
                TTGACCCCGT ALECAATCAGGAC
                                        GTCATTACCG
68
                TAATGGCATC AGGACTTTTG
                                        TTGGCGGTAA
                                                        640
69
    ACGGATTAAA
                            TGATGTCGTT
    CTGTACCGTA AGCCTGATGT
                                        GGGTGGTTTA
                                                        680
70
                                                        720
                ATCTTGTTGA
                            TTGGGTGTCC
                                        GTTGCAACCT
71
    TTCGCCAATG
                            GGTGCGCGAC
                                        ATATGCGTGA
                                                        760
72
    ACCAGGCCGC
                TTCCGGCGGT
73
    GTTATTAACC
                CAGATGGGCC
                            ATCTGTATGG
                                        CCATGTGGCA
                                                        800
74
    GATGAACTCG
                CGACCCCGTC
                            CTCTGCTATT
                                        CTCGATATCG
                                                        840
                                                        880
75
    AACGCAAAGT
                CACAACCTTA
                            ACCCGTAGCG
                                        GTGAGCTGCC
76
    GGTGGATAAC
                TTTGGCGTGC
                            CGCTGGCGGG
                                        TAGCCTGATT
                                                        920
                                        CAGAGCCGCG
77
    CCGTGGATCG
                ACAAACAGCT
                            CGATAACGGT
                                                        960
78
    AAGAGTGGAA
                AGGGCAGGCG
                            GAAACCAACA
                                        AGATCCTCAA
                                                       1000
                GTAATTCCGG
                            TAGATGGTTT
                                        ATGTGTGCGT
                                                       1040
79
    CACATCTTCC
                            CAGCCAGGCA
                                        TTCACTATTA
                                                       1080
80
    GTCGGGGCAT
                TGCGCTGCCA
81
    AATTGAAAAA AGATGTGTCT
                            ATTCCGACCG
                                        TGGAAGAACT
                                                       1120
82
    GCTGGCTGCG CACAATCCGT
                            GGGCGAAAGT
                                        CGTTCCGAAC
                                                       1160
83
    GATCGGGAAA
                TCACTATGCG
                            TGAGCTAACC
                                        CCAGCTGCCG
                                                       1200
    TTACCGGCAC GCTGACCACG
                            CCGGTAGGCC
                                        GCCTGCGTAA
                                                       1240
84
                            TCCTGTCAGC
                                        CTTTACCGTG
                                                       1280
85
    GCTGAATATG GGACCAGAGT
                                        CCGCTGCGTC
                TGCTGTGGGG
                            GGCCGCGGAG
                                                      1320
86
    GGCGACCAGC
    GGATGCTTCG
                TCAACTGGCG
                            TAATCTTTAT
                                        TCATTAAATC
                                                      1360
87
    TGGGGCGCGA
                TGCCGCCCCT
                            GTTAGTGCGT AATACAGGAG
                                                      1400
88
                            TTTACCGGGA GTTAAATAGA
89
    TAAGCGCAGA
                TGTTTCATGA
                                                      1440
                            GTGGCTGAAT ACATGAGTAT
                                                      1480
90
    GCATTGGCTA
                TTCTTTAAGG
                            AGGACGACGC AGAGAGGATG
                                                       1520
91
    TCACAGCCTT
                ACCTGAAGTG
92
                TGCGCCGTTC
                            AGGTCAAAAA AATGTCACAA
                                                       1560
    CACAGAGTGC
93
                            TGGATGGGGT
                                        GACACAATAA
                                                       1600
    CCAGAAGTCA AAAATCCAAT
                            CGATCGTATC
                                        GATAGAGACG
                                                       1640
94
    AACAGGAAGA
                CAAGCATGTC
95
    TGATTAACGC GCTAATTGCA
                            GGCCATTTTG
                                                       1674
.96
97
    (2) INFORMATION FOR SEQ ID NO:2:
98
```

99 (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1674 base pairs

PAGE: 3

### **RAW SEQUENCE LISTING** PATENT APPLICATION US/08/711,961 TIME: 19:33:10

DATE: 12/11/96

INPUT SET: S14333.raw

```
(A) LENGTH: 1121 base pairs
101
     (B) TYPE: Nucleic acid
     (C) STRANDEDNESS: Double
102
     (D) TOPOLOGY: Linear
103
     (ii) MOLECULE TYPE: Other nucleic acid
104
     (A) DESCRIPTION: The E. coli asd gene coding for b-aspartic semialdehyde dehydrogen
105
106
     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
107
108
109
     TCCATAATCA
                 GGATCAATAA
                             AACTGCTGCA
                                          GAAATGATTT
                                                          40
110
     CATTCATAAC
                 TCAAATTCCC
                             TGATAATTGC
                                         CGCGGACTTT
                                                          80
                             ATAAGTCGCA
                                          TTACTCATGG
                                                         120
111
     CTGCGTGCTA
                 ACAAAGCAGG
                                                         160
112
     CTTCGCTATC ATTGATTAAT
                             TTCACTTGCG
                                          ACTTTGGCTG
                                                         200
     CTTTTTGTAT
                 GGTGAAAGAT
                              GTGCCAAGAG
                                          GAGACCGGCA
113
                 GCACACATCT
                             TTGCAGGAAA
                                          AAAACGCTTA
                                                         240
114
     CATTTATACA
                                         GTATGGTCGG
                                                         280
     TGAAAAATGT
                 TGGTTTTATC
                             GGCTGGCGCG
115
     CTCCGTTCTC ATGCAACGCA
                             TGGTTGAAGA
                                          GCGCGACTTC
                                                         320
116
                                                         360
     GACGCCATTC GCCCTGTCTT
                             CTTTTCTACT TCTCAGCTTG
117
                                                         400
118
     GCCAGGCTGC GCCGTCTTTT
                             GGCGGAACCA CTGGCACACT
                                                         440
                 TTTGATCTGG
                             AGGCGCTAAA GGCCCTCGGA
119
     TCAGGATGCC
                                                         480
     TCCTCAACAC ATCTTCCGTA
                             ATTCCGGTAG ATGGTTTATG
120
                 GGGGCATTĞĈ
                                                         520
121
     TGTGCGTGTC
                             GCTGCCACAG CCAGGCATTC
                                                         560
122
     ACTATTAAAT
                 TGAAAAAAGA
                             TGTGTCTATT CCGACCGTGG
123
     AAGAACTGCT
                 GGCTGCGCAC
                             AATCCGTGGG CGAAAGTCGT
                                                         600
124
     TCCGAACGAT CGGGAAATCA
                             CTATGCGTGA GCTAACCCCA
                                                         640
                             GACCACGCCG GTAGGCCGCC
125
     GCTGCCGTTA CCGGCACGCT
                                                         680
                             CCAGAGTTCC TGTCAGCCTT
                                                         720
126
     TGCGTAAGCT GAATATGGGA
                                                         760
127
     TACCGTGGGC GACCAGCTGC
                             TGTGGGGGGC CGCGGAGCCG
                                                         800
     CTGCGTCGGA TGCTTCGTCA
                             ACTGGCGTAA
                                          TCTTTATTCA
128
     TTAAATCTGG GGCGCGATGC
                             CGCCCTGTT AGTGCGTAAT
                                                         840
129
     ACAGGAGTAA GCGCAGATGT
                             TTCATGATTT ACCGGGAGTT
                                                         880
130
                             TTTAAGGGTG GCTGAATACA
     AAATAGAGCA TTGGCTATTC
                                                         920
131
                             TGAAGTGAGG ACGACGCAGA
                                                         960
132
     TGAGTATTCA CAGCCTTACC
     GAGGATGCAC AGAGTGCTGC
                             GCCGTTCAGG TCAAAAAAT
                                                        1000
133
                             ATCCAATTGG ATGGGGTGAC
                                                        1040
     GTCACAACCA
134
                 GAAGTCAAAA
                                          TCGTATCGAT
                                                        1080
                 AGGAAGACAA
                             GCATGTCCGA
135
     ACAATAAAAC
                             AATTGCAGGC CATTTTGCGG
                 TTAACGCGCT
                                                        1120
136
     AGAGACGTGA
                                                        1121
137
138
     (2) INFORMATION FOR SEQ ID NO:3:
139
140
     (i) SEQUENCE CHARACTERISTICS:
141
     (A) LENGTH: 22 base pairs
142
143
     (B) TYPE: Nucleic acid
     (C) STRANDEDNESS: Double
144
145
     (D) TOPOLOGY: Linear
146
     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:
147
148
                                            22
     AGATCTCCCT GATAATTGCC GC
149
150
151
152
```

PAGE: 4

## **RAW SEQUENCE LISTING** DATE: 12/11/96 PATENT APPLICATION US/08/711,961 TIME: 19:33:14

#### INPUT SET: S14333.raw

```
153
     (2) INFORMATION FOR SEQ ID NO:4:
154
     (i) SEQUENCE CHARACTERISTICS:
155
     (A) LENGTH: 26 base pairs
156
157
      (B) TYPE: Nucleic acid
      (C) STRANDEDNESS: Double
158
      (D) TOPOLOGY: Linear
159
160
161
      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
162
163
     AGATCTCGCT TACTCCTGTA TTACGC
164
165
166
167 (2) INFORMATION FOR SEQ ID NO:5:
168
      (i) SEQUENCE CHARACTERISTICS:
169
      (A) LENGTH: 20 base pairs
170
      (B) TYPE: Nucleic acid
171
      (C) STRANDEDNESS: Double
172
173
      (D) TOPOLOGY: Linear
                                                         0
174
175
176
     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
177
                                                       20
178
     CGAGGGCCTT TAGCGCCTCC
179
180
     (2) INFORMATION FOR SEQ ID NO:6:
181
182
183
      (i) SEQUENCE CHARACTERISTICS:
184
      (A) LENGTH: 20 base pairs
      (B) TYPE: Nucleic acid
185
      (C) STRANDEDNESS: Double
186
      (D) TOPOLOGY: Linear
187
188
189
190
191
     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
192
                                                     20
193
     GATCCTCAAC ACATCTTCCG
194
195
196
     (2) INFORMATION FOR SEQ ID NO:7:
197
198
     (i) SEQUENCE CHARACTERISTICS:
199
     (A) LENGTH: 22 base pairs
     (B) TYPE: Nucleic acid
200
      (C) STRANDEDNESS: Double
201
202
      (D) TOPOLOGY: Linear
203
204
205
     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:
```

# PAGE: 5 RAW SEQUENCE LISTING DATE: 12/11/96 PATENT APPLICATION US/08/711,961 TIME: 19:33:17

		INFUL SEL: S14.		
206 207	GAGCTCCCCT GATAATTGCC GC	22		
208 209		•		
210	(2) INFORMATION FOR SEQ ID NO:8:			
211				
212	(i) SEQUENCE CHARACTERISTICS:			
213	(A) LENGTH: 26 base pairs			
214	(B) TYPE: Nucleic acid			
215	(C) STRANDEDNESS: Double (D) TOPOLOGY: Linear			
216 217	(D) TOPOLOGI: Linear			
218				
219	(xi) SEQUENCE DESCRIPTION: SEQ ID	NO: 8:		
220	, , ,		·	
221	GTCGACCGCT TACTCCTGTA TTACGC	26		
222	1			,
223	xp_a_ H_H	Rt(	<u>н</u> н <u>д</u>	·
2/25	— <u>E</u>			
226	I r <sub>%</sub>			fine
227	<del></del>			1.45
228	<u> </u>			
224 2/25 226 227 228 229	M_Courier M_New York_"	1	*	
1				
	(			
			_	
		() ()	-2	
		$\mathcal{A} \cap V$	0 / 0	